RESTORE OUR WATERS
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Restore Our Waters Status Report 2004-2008

Restore Our Waters is the City of Seattle's commitment to take actions and promote partnerships that protect and improve our creeks, lakes, the Duwamish River and Puget Sound. This report provides a summary of the progress to date in achieving the *Restore Our Waters* challenge laid out by Mayor Nickels in 2004.

WHY A RESTORATION STRATEGY FOR OUR WATERS?

Seattle is a City defined by water. Puget Sound, Lake Washington, Lake Union and the Ship Canal, the Duwamish River, urban creeks and small lakes each enhance the quality of life for the people, fish, birds and other wildlife that live here. The City is currently host to four species of salmon including Chinook salmon, listed as threatened under the Endangered Species Act (ESA). It also hosts resident trout, blue herons, bald eagles and a web of other water dependent species. Seattle's major waterways bustle with water-oriented business and recreational opportunities and support one of the premier industrial seaports on the West Coast. Seattle's aquatic areas also offer important opportunities for residents to enjoy and experience nature close to home.

Over 150 years of urbanization have steadily degraded Seattle's aquatic resources. A six mile stretch of the Duwamish River is a Federal Superfund site. Over 90% of Seattle's 146 miles of shoreline have been modified and lack natural connections to the water. Seattle's urban creeks have seen stormwater flows equivalent to some rivers. Fish in our local waters contain high amounts of mercury and PCB's and some of our coho salmon are dying before they can spawn in Seattle streams. Yet, while they are considered degraded, these aquatic environments have amazing vitality and resilience.

Hence the Mayor set forward this strategy to give more focus and coordination to actions by government and the community to *Restore Our Waters.*

DEVELOPMENT OF THE "RESTORE OUR WATERS" STRATEGY

In April of 2004 the Mayor issued Executive Order 03-04 requiring inter-departmental review of everything the City does that affects water resources inside the City limits. Twelve City Departments were instructed to develop a shared action plan that would:

- Focus the City's efforts towards achieving what is best for water quality and aquatic habitats inside the City;
- Establish City-wide priorities and a shared framework for investments and best management practices (BMP);
- Develop a long-term framework for departments to work together on matters affecting our waterbodies;
- Streamline and coordinate city policies, regulations, and enforcement;
- Create educational opportunities which inspire others to take protective and restorative actions on behalf of our waterbodies;
- Provide incentives for others to steward, protect and restore these resources;
- Identify methods to leverage City funding of these efforts; and
- Create a mechanism for stakeholder involvement.

The findings from the cross-departmental effort formed the foundation of the *Restore Our Waters Action Agenda*. The nine Actions recommended in the Action Agenda and accomplishments to date are highlighted below.

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Action Item #1: Establish Long-Term Aspirations for In-City Water Resources
Action Item #2: Use Science-Based Guidelines to Direct Citywide Efforts

Accomplishments

- In 2007 *State of the Waters Report for Creeks and Small Lakes* released. This report presents the City's science work and understanding about these systems.
- In 2007 *A Science Framework for Ecological Health in Seattle's Streams* released. This document serves as a roadmap for thinking about and making decisions to improve ecological health in Seattle's aquatic areas.
- In 2008 a Watershed Forum convened the grass-roots community who are working to improve creeks in our major watersheds. This served as opportunity for watershed groups to make connections, identify common themes and the potential for partnerships.

Action Item #3: Establish Clear, Quantifiable Goals and Measures of Progress

Accomplishments:

- The development of an SPU Urban Watershed Strategy is leading the effort to develop clear goals, indicators and performance measures for Seattle. A draft of the strategy goals, objectives, physical indicators and performance measures will be publicly available in 2009.

Action Item #4: Make Strategic Changes to the City's Policy and Regulatory Framework

Accomplishments:

- 2006 Comprehensive Plan Update- Added environmental critical areas policies and articulated support for low impact development techniques.
- 2006 Adopted Strengthened Environmentally Critical Areas Regulations- Increased protection of creeks, shorelines and wetlands.
- Developed a draft Shoreline Alternative Mitigation Program for the Lake Union Ship Canal System. When adopted, this will result in greater mitigation flexibility for shoreline property owners while creating better quality habitat.
- Stormwater and Drainage Code Update. SPU and DPD are leading the effort to complete an overhaul of this code with adoption in 2009. The result is likely to be improved water quality and reduced flows in our creeks and large water bodies. A substantial shift in the stormwater code will be the requiring of green stormwater infrastructure (bioretention, permeable pavement, green roofs, etc) to the maximum extent feasible.

Action Item #5: Move Forward on Priority City Capital Project Investments

Accomplishments:
Below is chart that describes progress to date in implementing the 39 City Priority projects that were identified in the 2004 *Restore Our Waters Action Agenda*.

Progress on City Priority Projects 2004-2008	
Riparian Reforestation Partnerships	Underway. Many acres have been restored through the Green Seattle Partnership and other volunteer and Parks actions.
Channel Widening & Related Habitat Restoration Assessments	Many projects completed including, Thornton Creek culvert replacements and the Maple Leaf Reach habitat improvements.
Creek Flow Control Strategies Watershed Based Investigation - Focus High Impact Basins	Projects in Thorton and Pipers Creek watersheds are working to identify the best methods for controlling flows.
Creek Flow Control Strategy Implementation (natural drainage, detention, bypass, etc)	A number of large scale natural drainage system projects (e.g., High Point, Pinehurst Green Grid, and Capital Hill Water Quality Project) and smaller project have been constructed or are planned.
Sediment Remediation – Duwamish	Underway
Water Quality Improvements Duwamish – Norfolk basin	Not currently budgeted- Possible in 2011-2014
Water Quality Improvements Duwamish – South Park basin	South Park Pump Station recommended for 2009 CIP
Bitter Lake Water Quality Improvements (Sediment Dredging)	Not currently budgeted
Bitter Lake Water Quality Improvements (Stormwater Vaults)	Planned for 2009-2014 CIP (under the title Bitterlake/ 137th stormwater)
Water Quality Improvements In-Land Lakes/Lake Union – Densmore basin	Aurora Avenue N/ 137th project planned for 2009-2014
Bridge Stormwater Treatment Assessment	Not currently planned
CSO – Ballard	Planned for 2011 -2014 CIP
CSO – Fremont/Wallingford	Planned for 2011 -2014 CIP
Saltwater Intrusion at the Ballard Chittenden Locks – Assessment	incorporated in Biological opinions for the Locks, will be undertaken by the U.S. Army Corps of Engineers dependent on availability of Fed $
Sediment Remediation - Gas Works Park Shoreline	Study phase is expected to be completed in late 2009 pending successful discussion between EPA and Ecology.
CSO – Genesee Project	Conducting additional data collection now, small improvements (retrofits) in 2005 In recommended 2009 -2014 CIP
CSO – Henderson Project	In recommended 2009 -2014 CIP

Progress on City Priority Projects 2004-2008	
Shoreline Restoration - Beer Sheva Enhancement/Mapes Creek Mouth Daylighting	Coordinating w/ DPR and Army Corp. Design at 35% by end of 2008.
Shoreline Restoration – Martha Washington Park Phase 1 and 2	Phase 1 is complete, Phase II funded and is planned for construction in 2009
Shoreline Restoration – Sand Point Magnuson Park Northshore	Project complete
Shoreline Restoration – Rainier Beach Lake Park	Now named Chinook Beach. The project is complete. Additional vegetation improvements are planned for 2009.
Shoreline Restoration – Lake WA Blvd./Madrona Drive.	Madrona Creek daylighting project complete.
Shoreline Restoration – Lake WA Blvd/McClellan Street	Not currently planned
Shoreline Restoration – Lake WA Blvd/S. Adams St. Renourishment	Planned for 2009- 2010 dependent on funding.
Shoreline Restoration – Lake WA Blvd/S. Alaska St. Substrate Enhancement	Planned for 2009- 2010 dependent on funding.
Shoreline Restoration – Seward Park Nearshore Substrate Enhancement	Project complete.
Natural Drainage System - High Point	The project is complete and the site is being monitored
Natural Drainage System – Broadview Green Grid	Project complete and post project monitoring complete.
Natural Drainage System – Venema Creek	Pre project monitoring occurring in anticipation of 2010 start.
Shoreline Restoration – Salmon Bay Natural Area Phase 1 (revegetation) & 2 (overwater structures)	Phase 1 complete and Phase II is funded for 2009.
Shoreline Restoration - Facilitate feasibility study for natural estuary at the Ballard Locks	Not currently planned.
Shoreline Restoration – Commodore Park to Railroad Bridge/Daylight Wolfe Creek Mouth	Heron Habitat Helpers, a community group, is investigating the value and feasibility of daylighitng the mouth of Wolfe Creek
Shoreline Restoration – Alaskan Way Seawall – Elliot Bay shoreline habitat improvements	Seawall habitat test panels installed and being monitored.
Shoreline Restoration – feasibility study for bulkhead removal & shoreline restoration (including Alki, Fairmont Creek, Puget Creek, Myrtle Edwards Park)	SPU/DPR (joint lead); funding to come from DPR or grants
Shoreline Restoration – facilitate removal of submerged woodpile at the mouth of Taylor Creek	Preliminary investigations into size and location completed in 2004. No further work currently planned.
Fish Barrier Removal - At Rainier Ave & immediately upstream	In 2010 recommended CIP
Natural Drainage System – Pinehurst	Project complete
Northgate Water Quality Project(s)	The Thornton Creek Water Quality Channel will be completed in 4Q 2009 or 1st Q 2010.

Below are a number of additional projects have taken place in the intervening four years to help move us toward our restoration goals:

Other Major ROW City Projects 2004-2008	
Duwamish River	➢ Duwamish Superfund progress -Duwamish Diagonal sediment remediation completed. -Duwamish Diagonal storm drain cleaned. -Many business inspections done to increase use of BMPs and reduce contamination risk. Slip 4 remediation design completed and approved. -New Study begun on North Boeing Field to reduce recontamination risk to Slip 4. -Georgetown Steamplant Flume being closed to reduce recontamination to Slip 4. ➢ Water Quality in South Park -drainage study completed -design for new pump station at 7th Avenue completed ➢ Port public access site and shoreline habitat restoration at Gateway South (8th Ave S on South Park shore) street end.
Puget Sound Shoreline	➢ Sea Wall habitat test panels ➢ Sculpture Park cove ➢ Luna Park rebuild and restoration ➢ Seacreast Park beach creation ➢ Salmon Bay Natural Area
Lake Washington/Locks/Union Bay	➢ Gasworks sediment remediation ➢ Parks shoreline restoration projects including Seward, Martha Washington Park Magnuson Parks and Chinook Beach ➢ Madrona Creek daylighting ➢ Stan Sayers Park improvements ➢ Duck Bay (Arboretum) habitat restoration
Thornton Creek	➢ Maple Leaf Reach ➢ North Fork Thornton Creek ➢ Little Brook South Natural Area ➢ Victory Creek Ravine ➢ South Fork Thornton Creek ➢ Pro Parks Levy property acquisitions
Taylor Creek	➢ Upland vegetation restoration and creek enhancement
Pipers Creek	➢ Numerous creek maintenance and restoration activities including major wetland enhancement and restoration - Japanese Knotweed Removal in Carkeek Park

Other Major ROW City Projects 2004-2008	
Longfellow Creek	➢ On going upland vegetation restoration and creek enhancement - Longfellow Creek Restoration at Thistle Street
Fauntleroy Creek	➢ Lower Fauntleroy Creek & Estuary project - On going upland vegetation restoration and creek enhancement
Other Creeks	➢ Kiwanis Ravine: Phases 1 & 2
Green, Bitter, Haller Lakes	➢ Green Lake shoreline habitat restoration and enhancement at - Haller Lake NW 125th street end restoration
Fish Passage Barriers Removed	➢ Lake City Way & NE 98th St culvert (2004) ➢ 35th Ave NE & NE 125th St culvert (2004) ➢ 12th Ave NE & NE 107th culvert (2006) ➢ NE 105th and 27th (2008)

Action Item #6: Make Investments to Ensure City Operations Support Improved Aquatic Health

Accomplishments:

- Water Rules! Training. Training of over 1000 city personnel on the reason for and how to comply with environmental regulations.
- Citywide Source Control Assessment. Over two phases this assessment looked at stormwater source control issues at the 60 city owned facilities with the highest potential pollution generating potential. Corrective measures were recommended as well as planning level cost estimates.
- ROW Interdepartmental Team– Acts as a resource and sounding board for implementation of city regulatory changes and developing the outreach and communications plan. Coordinating the implementing the Citywide Source Control Assessment recommendations at 60 city facilities. Implementation is on-going with actions complete at a number of facilities.
- Street Sweeping Pilot completed. This showed the efficacy of the targeted use of street sweeping to achieve water quality goals.
- Strategic maintenance of combined sewer overflow (CSO) and drainage infrastructure (catch basin cleaning, etc.) to reduce water quality impacts as result of storm events.

Action Item #7: Expand Partnerships with the Community and Private Property Owners to Restore our Waters

Accomplishments:
Below is a partial list of events ROW has been engaged with over the past 4 years.

ROW Outreach Events To Date
The Aquatic Habitat Matching Grant Program funded 12 watershed restoration projects around the city.
Completion of the Fremont/Ballard RainCatcher Pilot
Kick off of Lakewood RainCatcher Pilot
Participation in the Zoo exhibit 2006 – Green Roof project
Release of State of the Waters Report & Scientific Framework
Hosted a speakers forum on the Green Home Stage at the Green Festival
Habitat Seawall Panels press event
Salmon Bay Natural Area Ribbon Cutting
Co- Sponsor Water Alive Art Show with the Women Painters of Washington
Partner in developing and delivering Residential RainWise
Partnership with Puget Sound Carwash Assn. and Brown Bear to promote best car washing practices
Convened a forum across city agencies consisting of water quality and habitat restoration outreach and communications specialists
Partnered with Puget Soundkeeper Alliance for the Lake Union Sweep
Support for Watershed Councils including meeting planning and implementation
Partnered with Cascade Bicycle Club to be title sponsor of the Salmon Spawning Cycle
Partnered with Seattle Art Museum for Salmon Return – interactive family event
Participation on the Steering Committee for STORM (Stormwater Outreach for Regional Municipalities)
Participation in the Puget Sound Partnership Communications Forum
Partnered with the Women Painters of Washington Waters Alive! Art exhibit
Sponsored Watershed Forum with representatives from the five major watersheds

Action Item #8: Advance Scientific Understanding and Adaptively Manage City Efforts

Accomplishments:

- Pre-spawn mortality studies helped us to understand the state of our creeks.
- Completed city wetland mapping vastly increasing our knowledge of their location.
- Developed and published updated creek mapping helping to inform the public and regulate our environmentally critical areas.
- Pre-project monitoring at Piper's (Venema NDS project) and Thornton Creek (Thornton Creek Confluence Project) to help us better understand the true impact of these planned innovative projects.
- Lakewood Raincatcher pilot project is providing valuable information about how engage residential properties in CSO mitigation strategies such as raingardens and cisterns on private property.
- Seawall Habitat Test Panel monitoring is providing new information about how to get the bets possible habitat value in a common urban shoreline condition.
- Olympic Sculpture Park cove, Chinook Beach and Seward Park pre and post project monitoring is helping us better understand the true impact of these innovative habitat projects.
- Developed "stormwater footprint" pollutant loading model for use in Seattle and the entire Puget Sound.
- Developing Water Quality Potential Assessment to test and identify the appropriate BMP's.
- Completed a Street Sweeping Pilot Project providing valuable information about the potential for using this technique to improve water quality.